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ABSTRACT

Prepared as part of the Career Education Project of the Council of Chief State School Officers (CCSSO), the paper deals with curriculum development and implementation. Using current literature on the topic as a point of reference, topics dealt with include: (1) the role of curriculum in career education, (2) the impact of career education on State and local curriculum development efforts, (3) accountability and evaluation, (4) national efforts in career education curriculum development, and (5) staff development. Four career education projects are commented on: (1) The Public Service Occupations Curriculum Project, (2) The Enrichment of Teacher and Counselor Competencies in Career Education Project, (3) The Communications Media Occupations Cluster Project, and (4) The Project: Developing Career Awareness for Spanish Surnamed People. Each project description includes information on the project's development and implementation and some sample materials. The paper concludes that curriculum materials for career education should be: (1) economically feasible, (2) predicated on regular classroom staffing patterns, (3) contained within the current allocation of teacher time and effort, and (4) adaptable to local needs, interests, and options. (MW)

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CAREER EDUCATION:
An Educational Priority for the Seventies

Part III: "The Development and Utilization of Curriculum Materials for Career Education"

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Preface

As pointed out in the Preface to Part II of this series, people should know where they want to go before they should set out on a journey. Stated in more explicit fashion, they should know what they want to do or accomplish before they begin to accomplish whatever is the task.

In much the same vein, it is necessary for people, as they identify goals and purposes, to have some idea of the options that are open to them. When considering travel from one point to another, to illustrate, there are numerous options that are available, and which should be carefully considered before deciding on the route to be taken, the mode of travel, and perhaps the time-frame to be used.

So it is with Career Education efforts: When a determination of purpose has been made and agreed upon, those responsible for implementation will need to consider the many options that are open to them in terms of materials that might be employed, target populations, and the like.

Those responsible for implementation of Career Education programs will obviously have to consider the options in light of varying conditions, constraints, and restraints that might exist as a result of localized conditions, to be sure. But this in no way negates the need to know what options exist, and how each might facilitate installation or expansion of Career Education efforts.

Parts III and IV of this series, having to do with materials and models, respectively, are intended to be of assistance to state education agency personnel as they continue in their efforts to make Career Education a reality in their states.

David L. Jesser

THE DEVELOPMENT AND UTILIZATION OF CURRICULUM MATERIALS FOR CAREER EDUCATION

Since the beginning of the early developmental efforts in Career Education of the early 1960's, considerable attention has been devoted to ways in which educational institutions might better respond to the needs of the learner in terms of career development. This attention and effort has been bolstered by resources provided by private foundations, by efforts of federal and state governmental agencies, and by provisions of federal laws. Provisions of the Vocational Education Amendments of 1968, for example, have enabled state and local education agencies to design, plan for, and implement many exemplary Career Education programs.

Other appropriations relating to the same legislation have made it possible for other federal and state agencies to support Career Education efforts in several similar ways. In 1971, for example, the U.S. Office of Education allocated resources for the development of "modules" that could be useful in implementing Career Education. Funds, under Parts C and D of the Vocational Education Amendments, were also made available for the purpose of encouraging and supporting the development of exemplary Career Education programs in every state. And funds, especially under Part I, were provided for the purpose of developing certain types of curricular materials.

The efforts under Part I of the Vocational Education Amendments did not "just happen". They emerged from a need which became all too apparent when efforts were made to bring Career Education into the total curriculum. In some instances, as with several of the fifteen (15) Occupational Clusters, suitable curricular materials were found to be lacking. As a result, as thrusts to implement Career Education within the existing school structure have taken

more definitive form, it has become essential for serious thought to be given to practical ways in which this new dimension of education might best be implemented.

At the outset, it appeared that some fundamental changes in education would of necessity have to occur if implementation of Career Education were to be achieved. Several options--or possible changes--seemed apparent. These included:

- The existing school day could be lengthened in order to accomodate Career Education;
- Significant portions of the existing curriculum could be deleted and replaced by Career Education; or
- A deliberate effort could be made to revise curricular materials in local school districts in order that they might retain essential existing materials, but at the same time incorporate career development concepts.

As claims that the existing curriculum was irrelevant became more prominent, and as more and more people asserted that the curriculum did not meet the needs of students either for the present or the future, the nation's educational agencies began to seriously consider the third option. They were able to perceive Career Education as the change agent which could both reorient and revitalize the heavily criticized existing curriculum.

The Role of Curriculum in Career Education

Generally speaking, Career Education programs have tended to emphasize the use of various types of career-oriented classroom activities as one method of relating traditional subject matter to the world of work. Initial efforts, as many will recall, often consisted of providing students with field trip experiences and of inviting community resource persons into the classroom to discuss their own careers with the students. It became apparent, however, to Career Edu-

cation advocates, that the goals which had been envisioned for Career Education could not be reached without an articulated, integrated approach. It became apparent to its proponents that Career Education, if it were to be a truly moving force in American education, could not be simply another manifestation of the "add on syndrome" that has so often afflicted education--a point emphasized by Hoyt and his colleagues:

> Career Education does not ask the academic classroom teacher to simply add one or more units to an already overcrowded set of learning objectives. Rather it asks the teacher to change and adapt current lesson plans to accommodate a career education emphasis.

But is it possible and feasible for curriculums to be modified so as to incorporate or integrate the concepts of Career Education?

The extent to which schools having identifiable Career Education programs were able to integrate career development concepts into existing curricula was the subject of nationwide study conducted in 1972 by the Center for Occupational Education at North Carolina State University. In the course of the study, funded with a grant from the U.S. Office of Education, 41 schools and their programs were reported and described in the publication, Synopses of Selected Career Education Programs: A National Overview of Career Education. In virtually every one of the program descriptions, there are to be found clear indications that strong emphasis had indeed been placed on the integration of career development concepts into the curriculum.

In a later document prepared by the North Carolina Center--An Anthology of 15 Career Education Programs--15 of the 41 programs which had been visited were analyzed in depth. In each analysis, a section was devoted to an examination of how the education program had been utilized to support Career Education concept.

Again, the emphasis on the integration of career development concepts into the overall educational program was readily apparent.

In several other USOE sponsored efforts, the importance of the role of the curriculum in implementing the concept of Career Education has been repeatedly stressed. Two statements prepared by the American Institute for Research (which has been engaged in the development of curricular materials for use in Career Education) serve to illuminate this emphasis.

> During the early part of this century, the curriculum was defined largely in terms of its social utility, that is, in terms of its benefits to society as a whole. During the 1930's and 1940's curriculum attention centered largely on the consideration of principles of child growth and development. During the 1950's and 1960's curriculum development was concerned almost exclusively with content considerations. In recent years, however, one can begin to see a growing emphasis on personal utility.
>
> The increasing sophistication of education in accomodating individual differences, in personal interests, abilities, goals and ambitions, coupled with the growing social concern for the maintenance of individuality in an increasing dehumanized and technological society, appears to be resulting in a strong pressure for schools to become more concerned with serving the individual.

From the evidence available, it is apparent that the curriculum can be the single, most effective delivery system available to schools as they implement programs of Career Education. However, it should be equally apparent that the curriculum should reflect the changes which concepts of Career Education demand through a totally articulated, conceptual design. It must not be merely "another" curriculum.

Impact of Career Education on State and Local Curriculum Development Efforts

As a result of the needs indicated, the promise of Career Education has already had considerable impact on curriculum development efforts in almost every state in the nation. In many instances, funds have been made available by the USOE for the purpose of helping states and local school systems to conceptualize and develop career education curriculum designs to meet their own needs. In some instances, state funds have been made available for these purposes and local education agencies have been encouraged to develop curriculum materials which would supplement, if not replace, existing textbooks and other curriculum materials which did not contain concepts of Career Education.

State Efforts. It has been observed that, while there has been considerable progress in the area of curriculum development (for Career Education) at the national level, the rate of progress has varied some what from one effort to another. In terms of state efforts in curriculum development, the same general observations would seem appropriate. Some state education agencies have perceived the area of curriculum development for Career Education to be a function of the agency, and consequently have developed materials suitable for use in their individual programs. On the other hand, some state education agencies have not yet become involved.

Obviously, if there is no perceived need, state education agencies should not become involved. Curriculum development can be tedious, time-consuming, and costly. And state education agencies should certainly not become involved in curriculum development merely for the sake of "being involved". If, however, after examining carefully the existing curricular resources, the state education agency does perceive a real need for additional (or substitute or curricular)

materials, it is possible for relevant and useful materials to be produced.

In New Mexico, where the primary focus of Career Education in 1973-1974 has been directed toward grades K-6, there was an obvious need for curriculum materials that would assist elementary teachers in integrating Career Education concepts into the existing curriculum. No suitable materials of this nature were available. As a result, under the leadership of Dr. Jean Page, of the New Mexico Department of Education, a set of some 500 "Career Education Activity Cards," for use by individual teachers were developed and distributed to the elementary schools. These should provide the teachers with a valuable tool to use in Career Education. A sample card is shown below:

Hospitality Cluster	Sample Activity Card Grade Level 2	Language Arts Creative Arts
Activity....."Park Design"		
	You like to play in a park. Can you think of any jobs that people have at the Park? Who keeps it looking nice? Design a Park you would like.	
Suggested Materials		
	Cardboard, popsicle sticks, clay, construction paper, metal, rocks.	

When the Career Development Program was developed in Ohio, it was apparent that teachers would need some assistance, in the form of curricular materials, if the concepts of Career Education were to be successfuly integrated into the existing curriculum. As a result, three major curriculum guides (Career Moti-

DEVELOPMENTAL OBJECTIVE

To develop an awareness of work in the society.

RELATED BEHAVIORAL OBJECTIVES

1. Given a situation in which the children trace a product through its entire production, they will be able to name the workers involved in this production and the tasks they performed.

2. Given a field trip to a company which produces some product, the child will be able to see products and relate what he has seen to one other person.

SUGGESTED ACTIVITIES

1. Ask the children to list the foods they ate for breakfast. Have them take the list home to find out where the product was boxed and packaged.

2. Role play a situation showing how a product is produced (e.g., how a loaf of bread is made) and use the children to portray all the workers involved in its production.

3. Give the students an assignment made up of several steps in incorrect order. Have them organize the steps in proper order, set up a "production line," and carry the assignment through to completion. Have them describe difficulties encountered in the process.

ADDITIONAL ACTIVITIES

FROM CAREER MOTIVATION: Curriculum Guide for Grades K-6. Ohio State Department of Education, 1972.

SAMPLE LESSON

"Go Fly a Kite"

MATERIALS

See below

PROCEDURE

1. Discuss with the class types of work done on a production line basis. Follow this with a film showing a production line in operation. (e.g., put out by Ford Motors, Proctor and Gamble, etc.) or visit a plant in which a production line exists.

2. Discuss details of setting up an assembly line for kite making in the classroom.

3. Provide the following materials to be used in the production line in the classroom: kite sticks of two different lengths, tissue paper-colored-pre-cut, string, cloth scraps, glue, scissors.

4. Put these directions on the board in any order, and read them to the class:

   a. Sort materials and put them in the correct order of assembly.

   b. Tie the sticks together.

   c. Glue tissue paper to sticks.

   d. Tie flying string to crossbar.

   e. Cut cloth into strips.

   f. Tie cloth strips to tail string.

   g. Go Fly a Kite!

5. Have children put directions in correct order, designate jobs, and complete production line task.

6. Evaluate the results.

NOTES AND COMMENTS

FROM CAREER MOTIVATION: Curriculum Guide for Grades K-6. Ohio Department of Education, 1972.

REQUIRED KNOWLEDGE AND SKILLS	THE STUDENT CAN	SUGGESTED LEARNING ACTIVITIES
The occupational opportunities in horticulture The types of horticultural businesses and their product or services (a) greenhouse production, (b) nursery production, (c) turf production, (d) landscaping, (e) fruit production, (f) vegetable production Factors and methods of propagating plants by: (a) seeds, (b) division, (c) layering, (d) cuttings, (e) grafting, (f) budding Essential equipment and its use in propagation of plants The purpose and effects of pruning trees, shrubs, and vines The common ornamental plants grown in the community Methods and equipment used in planting seeds and bulbs Methods of culturing bedding and potted plants	Identify common horticultural plants found in the community. Propagate plants using seed and various propagating media. Propagate plants vegetatively by cutting, graftage, budding, and layering. Transplant, plants from seedling flats to growing-out containers. Prepare a soil mix for use in the greenhouse. Operate equipment used in a nursery, greenhouse, landscaping firm, or fruit or vegetable farm. Prepare and plant a lawn. (Land lab or around school grounds or home.) Outline a lawn maintenance program. Sketch a simple plot plan. Read a landscape plan and install prescribed plants.	Propagate plants in the greenhouse. Take cuttings, root, and transplant. Conduct field trips to commercial greenhouses and nurseries. Prune fruit trees in a home orchard. Trim and shape shrubs on the school grounds. Landscape an area of the school grounds.

FROM Occupational Cluster Guide: Agriculture. Oregon Board of Education, 1970.

vation, K-6; Career Orientation,7-8; and Career Exploration, 9-10) have been developed under the leadership of Dr. Byrl Shoemaker, Ohio State Director of Vocational Education.

In the Ohio materials, the teacher is presented with information relating to topic, behavioral objectives, suggested activities, and sample lessons, as illustrated in this section.

While the illustrations of the New Mexico and Ohio efforts are directed toward the K-6 segment of education, it should be noted that similar efforts, have been made for the middle and secondary segments of education as well in several states.

In Oregon, for example, curricular materials have been developed for use in the various occupational clusters that have been identified as being applicable in the Oregon effort. These Occupational Cluster Guides contain information relating to student tasks, student objectives, principles of the specific learning activity, required knowledge and/or skills, and suggested activities. A representative page from the Occupational Cluster Guide for Agriculture (Oregon) illustrates the manner which the latter items are presented.

The use of illustrative curricular materials from three states should in a way, reflect a lack of similar activity in the other states. It has already been noted that progress in this area (at the state level) has been varied. The materials used here are intended to reflect, in a rather tangible way, some of that progress.

Accountability and Evaluation

As state and local education agencies became increasingly involved in curriculum development, there developed a real need for intensive in-service education programs which would aid personnel in acquiring the skills necessary for effective curriculum development, including abilities to write sequential as well as measur-

able objectives. As a result, in-service programs, having considerable emphasis on the evaluation of career-oriented curricular materials, have been developed and implemented in several states. With these efforts, the need for understanding and accepting accountability in curriculum development has become an integral part of curriculum design. This will be illustrated by a statement of the North Carolina Career Education Task Force in support of this critical area of concern, evaluation and accountability:

> Evaluation by school personnel is concerned with finding what is done in the school with students and how change may be brought about to help them realize their potentials as completely as possible. The evaluation process should be guided by the objectives for learners as outlined in a comprehensive curriculum plan. The evaluation of the sum total of the learner's progress can be directly related to the school's progress in planning and accreditation.
>
> With a career education emphasis in the curriculum, a variety of techniques of evaluation must be used to determine its effectiveness. In essence this evaluation is evaluation of the entire curriculum. We have traditionally used formal tests, usually of a standardized and written nature, as the main instrument of evaluation. More and more we must include other forms of evaluation, including use of interviews, anecdotal records, experience diaries, check lists, and other forms of informal tests. However, there must be a common format and uniformity of application. Teachers, in particular, need to know a great deal about evaluation and how to use specific evaluative techniques.
>
> There is a need to go beyond measuring of information learned and skills acquired. There is concern with the kinds of habits and attitudes children are forming. The question of concepts, thinking ability, interests, appreciations, and personal adjustment must be considered. Additionally, the extent to which the student is using and applying knowledge and skills must be evaluated.

> Finally, we must remember that the primary purpose of evaluation is the improvement of teaching and learning.

Although most of the state and locally developed curricular materials have not been utilized for a sufficient period of time nor controlled so as to provide for thorough validation procedures, many of the materials have been widely disseminated. Additionally, the USOE has published and distributed several Career Education bibliographies, and listings of Career Education curriculum materials have been compiled by organizations such as the Center for Vocational and Technical Education at the University of Ohio, the North Carolina Center, the American Institutes of Research, and by various state education agencies. Such materials serve to illustrate the depth and breadth of career-oriented curricular materials that are being developed and produced.

National Efforts in Career Education Curriculum Development

In recent years, the USOE has funded numerous curriculum development projects in efforts to make validated and transportable curriculum materials available to state and local education agencies. A significant example is the School-Based Career Education Model that was developed by the Center for Vocational and Technical Education (CVTE) of the Ohio State University. Although it has since been transferred for monitoring to the recently organized National Institute of Education, the CVTE project developed, among other items. a matrix which provided a scope and sequence of goal statements appropriate for grades K-12. The CVTE process began with the identification of eight elements of Career Education--Self-Awareness, Education Awareness, Career Awareness, Economic Awareness, Decision Making, Beginning Competency, Employable Skills and Attitudes and Appreciations--which were utilized to define the concept of career education. The eight basic elements were further defined in 32 themes.

The document that was developed illustrates the elements, the themes and appropriate goal statements. The goal statements were later utilized in the development and revision of curriculum units. The CVTE effort strived to modify existing curriculum in attempts to build an articulated curriculum system in grades K-12. The CVTE has more recently developed and published a rather extensive listing of Career Education Curriculum Materials (1973), in which units appropriate for use in each of the eight basic elements are described.

Staff Development. The need for in-service training opportunities for educators who are beginning to utilize the newly developed curricular materials has already been noted. Toward this end, the Center for Vocational and Technical Education at the Ohio State University has also been engaged in the development of a series of in-service training products that are designed to support the implementation of a comprehensive Career Education Program. The CVTE in-service materials include five categories: (1) Advisory Committee Materials; (2) In-Service Coordinator's Materials; (3) General Orientation to Career Education Materials; (4) Specific Audience Role Orientation Materials; and (5) Special and Ongoing Staff Development Materials. These are described in terms of focus, intended users, and availability, in a recent Center publication, Staff Development Products.

Another significant effort, supported with funds provided from the U. S. Office of Education, is the attempt of the American Institute for Research (AIR) to develop validated sample career education materials for kindergarten through grade 9. The AIR efforts, illustrated in Figure 1, are intended to provide the user with an array of instructional objectives from which to choose in order to implement a career-oriented curriculum.

In still another USOE attempt to aid in the development and implementation of career-oriented curriculum, efforts were made to refine the some 25,000 titles

in the Dictionary of Occupational Titles (DOT). As a result, 15 occupational or career clusters were identified:

- •Agri-Business and Natural Resources
- •Business and Office Education
- •Communications and Media
- •Consumer and Homemaking-Related Occupations
- •Construction
- •Environment
- •Fine Arts and Humanities
- •Health Occupations
- •Hospitality and Recreation
- •Manufacturing
- •Marine Science Occupations
- •Marketing and Distribution Occupations
- •Personal Services
- •Public Service
- •Transportation

Within the framework of this structure, which was far more manageable and less cumbersome than the separate job titles in the DOT, a series of grants were made for development of curriculum materials for use with in specific clusters. Grants were made for curriculum development projects in the areas of Public Service Occupations, Business and Office Occupations, Marketing and Distribution Occupations, Manufacturing Occupations, Construction Occupations, Communications Media Occupations, and Transportation Occupations clusters.

As might be expected in an effort as massive and diverse as curriculum development for the various occupational clusters, progress has varied. In several of the occupational clusters, as well as in other federally funded curriculum pro-

jects, significant progress has been made. Several of these, including those having to do with Public Service Occupations, Elementary Curriculum, Technology, and Minority students--are briefly described in the following paragraphs.

The Public Service Occupations Curriculum Project

This project, one of several funded under Part I of the Vocational Education Amendments of 1968, was initiated in the fall of 1971. Since that time it has been engaged in the development of nationally applicable curriculum guidelines and materials for one of the 15 career clusters--the Public Service Occupations cluster. The effort, under the direction of Dr. Patrick J. Weagraff, of the Vocational Section of the California State Deaprtment of Education, has resulted in the development and field-testing of several curricular approaches that can be used in conjunction with this particular cluster.

Public Service Analysis. As the project became operational, and as the project staff began to develop its detailed plans, it became evident that considerable variations were to be found in existing definitions of "public service". It was perceived, therefore, that a fundamental step in developing an appropriate secondary level curriculum for the public service career field would be an acceptable definition of the term, "public service". The project staff, with the help of a group having expertise in local, state, and federal governmental operations as well as secondary and post-secondary education, made a rather thorough analysis, and ultimately adoped as its guide the following definition:

> Public service occupations are those occupations pursued by persons performing the functions necessary to assomplish the mission of local, county, state and federal government, excluding the military service and trades requiring an apprenticeship. These missions reflect the services desired or needed by individuals and groups...and are performed through arrangements or organications established by society, normally on a nonprofit basis and usually supported by tax revenues.

On the basis of the above description, the project staff and the advisory groups were able to identify eight "major occupational groups" and thirty-nine "major job families" in the public service field. The major groups and families are portrayed in Figure 1, and, in the view of the project staff, adequately reflect the several discrete governmental functions that are performed at local, state, and federal levels.

Curriculum Guides. Using the eight major occupational groups and the thirty-nine major job families as bases for consideration, the project staff has organized and developed several sets of curriculum guides for use in secondary schools.

The first set to be developed, Orientation to Public Service Occupations, has been designed to acquaint secondary students with public service, and to help the students answer questions such as:

- What is public service?
- What does it offer me?
- What are the requirements for jobs?
- How much can I earn?

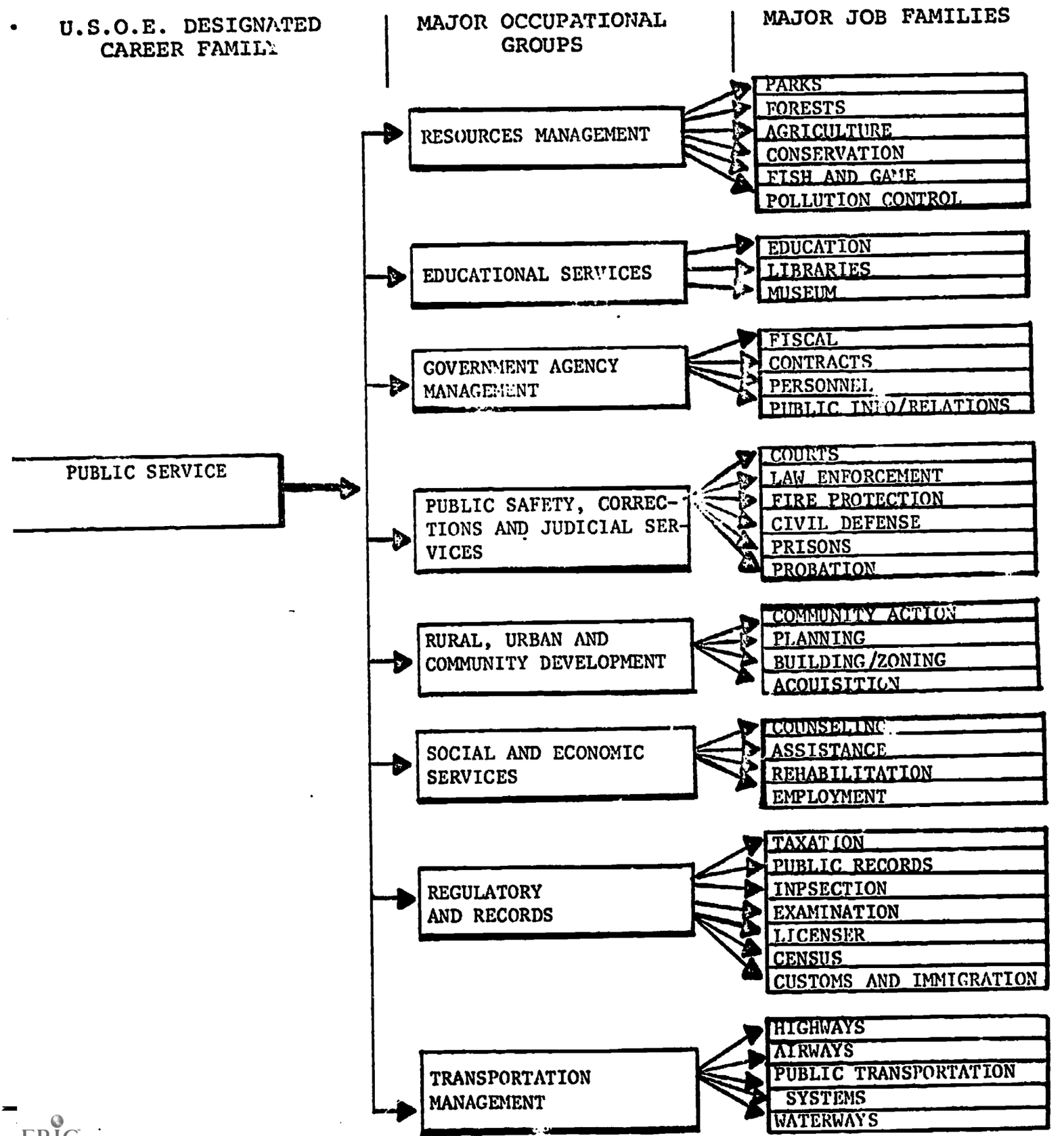
Additionally, the Orientation guide contains a separate section for each major occupational group, making it a useful resource for teachers who are concerned with implementation of the concept of Career Education.

The project has developed a second set of guides in which students are provided with information about elementary job skills. This set, Preparing for Public Service Occupations: Common Core, utilizes a "common core" and includes: Oral Communication; Written Communications; Basic Report Writing; Basic Record Keeping; Good Grooming; Relationships With Other People; Interviewing Skills; Applying for Public Service Jobs; and Techniques of Decision Making. As is evident, each of the preceding are applicable to any type of career development; hence the term, "Common Core".

Both sets of guidelines make use of the unit approach, and are intended to be

Figure 1:

MAJOR CIVILIAN OCCUPATIONAL GROUPS AND JOB FAMILIES IN PUBLIC SERVICE



highly adaptable to various types of learning situations. Because each unit is self-contained, a teacher can readily select the objectives, content, and instructional materials required to meet local needs.

Field Testing. The first two sets of guidelines, Orientation to Public Service Occupations and Preparing for Public Service Occupations:Common Core, are currently being field tested in selected high schools in California and New York. Other materials developed by the Public Service Occupations Curriculum Project and scheduled for field testing include:

- Preparing for Public Service Occupations: Social and Economic Services
- Preparing for Public Service Occupations: Education Services
- Preparing for Public Service Occupations: Public Safety, Correction, and Judicial Services
- Preparing for Public Service Occupations: Park and Recreational Services

The Enrichment of Teacher and Counselor Competencies in Career Education Project

One of the first questions asked when elementary school Career Education programs are being developed is, "What career development concepts should be included in a K-6 Career Education curriculum?" In an attempt to answer the question, and also to develop appropriate materials, the above named project, known as the ETC Project, was funded in 1972 under provisions of Part I of the Vocational Education Amendments of 1968.

The project, directed by Dr. Marla Peterson, of Eastern Illinois University, has had as its purposes the following:

1. DEVELOP, EVALUATE, AND DISSEMINATE CAREER EDUCATION CURRICULUM GUIDES that are applicable to any school with grade levels functionally equivalent to K-6 and which result in the integration of positive values and attitudes toward work, self awareness, development of decision making skills, and awareness of occupational opportunities in career lines within major occupational fields;

2. DEVELOP, IMPLEMENT, EVALUATE, AND DISSEMINATE SAMPLE TEACHING LEARNING MODULES for K-6 career education curriculum guides achieved by fusing and/or coordinating academic and occupational concepts and utilizing multi-media instructional tools;

3. DEVELOP, EVALUATE, AND DISSEMINATE A DESIGN OF A K-6 CAREER EDUCATION INSTRUCTIONAL SYSTEM which is adaptable to any elementary instructional program and which may serve as an alternative to present career education instructional systems.

Initial efforts of the ETC Project were directed toward acquisition of information. As a result of the initial efforts the project was able to assemble and disseminate early in 1973 the publication, A Bibliography of K-6 Career Education Materials.

A second publication, A Curriculum Design: Concepts & Components, has recently been prepared by the ETC Project, and is scheduled for publication in mid-1974.

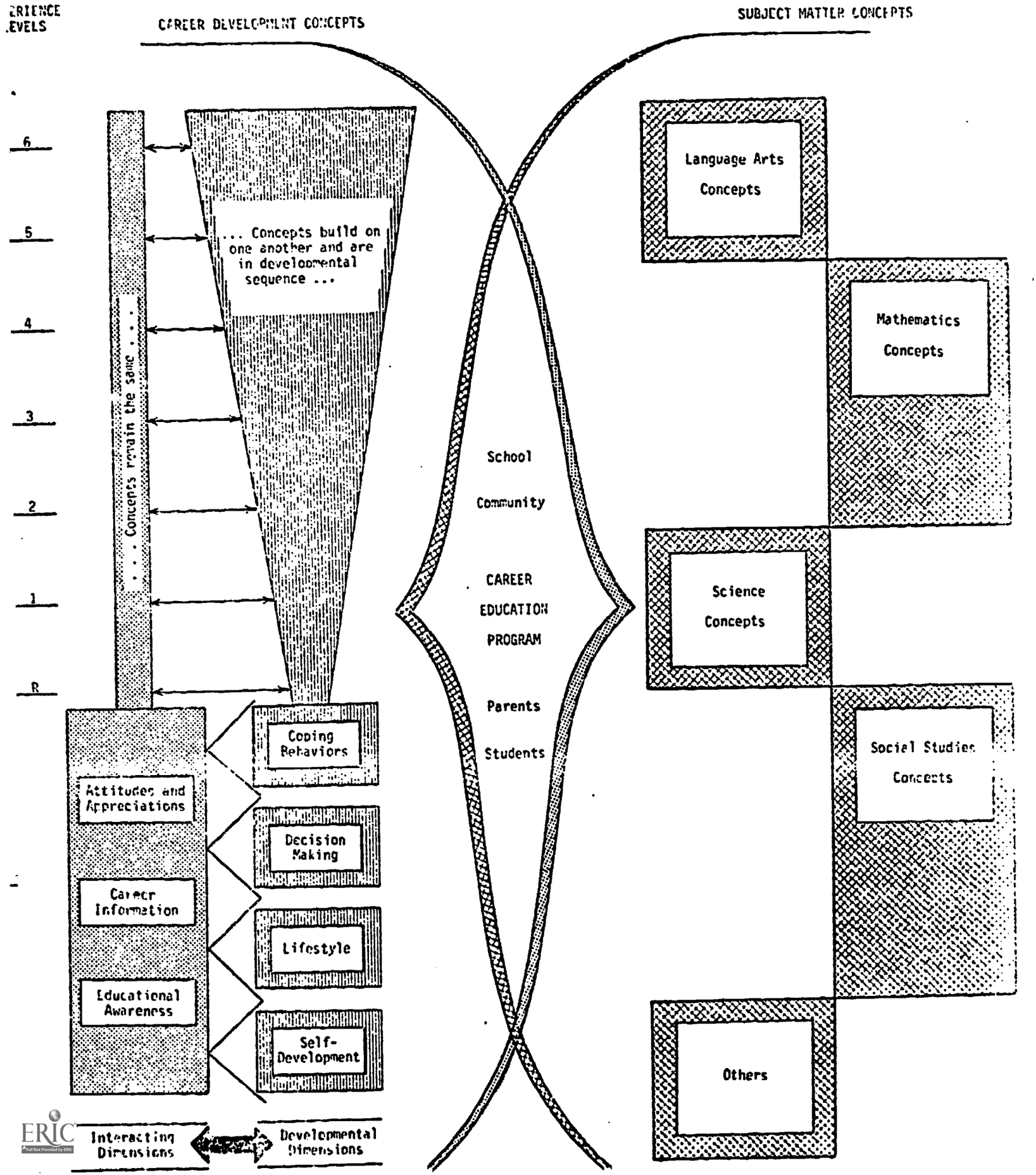
In the recent publication, the ETC Project has identified concepts that appear to be appropriate for the K-6 curriculum as they relate to the following dimensions of career development: Attitudes and Appreciations; Career Information; Coping Behaviors; Decision Making; Educational Awareness; Lifestyle; and Self-Development. These are shown, as they in turn relate to the total K-6 curriculum, in Figure 2.

It is intended that the concepts presented in the second publication will serve as a "blueprint" for ETC staff members to develop teaching units and prototype student materials. It is contemplated that each teaching unit: (1) will focus on one (or in some cases, several) concepts; (2) will be tied directly to a subject matter area (mathematics, language, arts, science, or social studies); and (3) will relate to an occupation or occupational cluster area.

Figure 2:

CAREER EDUCATION CURRICULUM MODEL (K-6)

Enrichment of Teacher and Counselor Competencies in Career Education Project



Definition of Career Education for the ETC Project. Consistent with the search for meaningful definitions that has been described, the ETC Project developed the following definition of Career Education for its (the Project's) guidance:

> Career Education in the elementary school is the curriculum which results when career development concepts and subject matter concepts are brought together in an instructional system that has meaning for children.
>
> Career development includes those concepts which are related to: Attitudes and Appreciations, Coping Behaviors, Career Information, Decision Making, Educational Awareness, Lifestyle, and Self-Development.
>
> Career education activities (1) emanate from the concepts that are related to the seven dimensions of career development that are cited above, (2) act as synthesizing agents to bring subject matter concepts and career development concepts together, (3) revolve around life-based experiences, and (4) are intended for use by all students throughout their educational programs.

The materials developed by the ETC Project have been organized in terms of the seven dimensions listed earlier, and are readily adaptable to all of the subject matter concepts portrayed in Figure 3.

The Communications Media Occupations Cluster Project

In yet another project operated with funds provided under Part I of the Vocational Education Amendments of 1968, a concerted attempt has been made to create a more effective delivery system, as it were, for Career Education efforts. In this project--the Communications Media Occupations project, or CMO project for short--a priority function has been to develop an information system that would provide the learner with information about the world of work. In so doing, it is thought that decision-making (by the learner) will be made more effective, regardless of specific level--that is, the Awareness Level, the Orientation Level, or the In-Depth Exploration Level.

Once a learner has made a decision concerning a particular career, a new set of informational needs becomes apparent. The learner needs, at this point, indicators of the occupations, educational requirements, and training opportunities that are available. And institutional program planners responsible for designing programs need to know more than just the number of learners interested in receiving training in a given occupational area. Information as to the employment potential at the national, the regional, the state and the local level, as well as the number of workers presently available and/or training is of great value to both the learner and the institutional program planner.

Field Test Information System. Toward these ends the CMO project, under direction of Dr. Lee Foust, Jr., and located at Oregon State University, has developed a prototypical information system for use with the Communications Media Occupations Cluster. The system was developed in cooperation with personnel responsible for a similar system--the Oregon Board of Education Career Program Planning System. These two information systems share program format and are at this time jointly operational on the Oregon State University computer system. They represent an initial response to the information needs described earlier. Other career education information needs exist, and it is the intent of the CMO project staff, in cooperation with Oregon Board personnel, to continue to develop information systems that could serve career education needs at the national, state and/or local levels.

CMO Occupational Families. While the CMO project has devoted considerable attention to developmental efforts related to the information system described above, it has also been actively involved in the development of materials that could be utilized within the information system. Initially, the project staff divided the Communications Media Cluster into three major areas: (1) Broadcast Communications Occupations (BCO); (2) Graphic Communications Occupations (GCO);

and (3) Line Communications Occupations (LCO). This in turn has led to the identification of a series of CMO Occupational Families. These "families," which may be found in any or all of the three major areas (BCO-GCO-LCO), are shown in Figure 3.

Figure 3:

CMO Occupational Families

Coding	Titles
A	PHOTOGRAPHERS (BCO-GCO)
B	ILLUSTRATORS (BCO-GCO)
C	CORRESPONDENTS (BCO-GCO)
D	TELEPHONE "OPERATORS" (LCO)
E	MESSAGE "ASSEMBLERS" (BCO-GCO-LCO)
F	IMAGE CARRIER "PREPARERS" (GCO)
G	IMAGE TRANSFERRERS (GCO)
H	FINISHERS (GCO)
J	TELECOMMUNICATIONS "OPERATORS" (BCO-LCO)
K	SUPERVISORS (BCO-GCO-LCO)
M	SALES-SERVICE REPRESENTATIVES (BCO-GCO-LCO)
N	TELECOMMUNICATIONS "INSTALLERS" (BCO-LCO)
P	GRAPHIC EQUIPMENT "INSTALLERS" (GCO)

For each of the CMO Occupational Families, the CMO project has developed an information base for use in the information system that was mentioned in the preceding section. An example is shown in Figure 4.

Figure 4:

A CMO Occupational Family

Occupational Family: PHOTOGRAPHERS (A) BROADCAST GRAPHIC

WTG Page: 230

The Occupational family, PHOTOGRAPHERS (A), offers employment opportunity in the Broadcast and Graphic communications occupational areas. The primary occupation--high employment potential job title--is:

DOT Job Title	WTG Page	DOT #
Photographer, News.	230	143062038

The job titles in this occupational family involve the use of photography as a technology using light to select a design for the production of the message that is to be distributed via the Broadcast and Graphic communications distribution systems. These job titles all require graduation from high school. An additional year or two of post-high school training and two to four years of experience is required for most job titles in this occupational family. For specific information on any job title refer to the GED and SVP levels of education, training, and experience provided in the alphabetical list of CMO job titles at the end of this Guide.

Other CMO job titles in this occupational family are found on:

WTG Page 230	DOT #
Cameraman.	143062010
Photographer Apprentice, Commercial.	143062026
Photographer, Commercial	143062034
Screen Reporter.	143062046

As can be seen from Figure 4, the user of the information--student, teacher, counselor, or program planner--can at a glance obtain considerable information relating to the job title having the highest employment potential, and can quickly locate references tc other job titles included in the family.

Field Testing. The materials that have been developed by the Communications Media Occupations Cluster Project are currently being field tested in selected school systems in several western states. The computerized program, while still being tested and modified, is operational at the present time. The project materials have not, at this time, beem published for distribution. It is anticipated that publication and wide distribution will be accomplished when the field testing program is completed.

The Project: Developing Career Awareness for Spanish Surnamed People

This project, directed by Dr. Suzette Gebolys, of Central Texas College, represents still another approach used in the curriculum development projects funded under provisions of Part I of the Vocational Education Amendments of 1968. In this project, multimedia instructional support materials were developed by the Research and Development Division of Central Texas College and field tested in one of the Dallas Middle schools.

The materials, which included color videotape cassettes and computer assisted instructional lessons, were designed to assist underachieving middle school students to master fundamental concepts of Career Education. In this particular effort, no attempt was made to focus on specific job or occupational clusters; instead, the materials were designed to introduce the student to the world of work, and at the same time to enhance the self-concept of the learner.

Project Objectives and Procedures. The basic purpose of the project has has already been noted. In keeping with the purpose, the project had as its objective the development and evaluation of multimedia materials focusing on Career Education concepts uniquely applicable to Mexican-American students. Stated in more specific fashion, the project attempted to investigate the problem:

> Is there a difference in learning and attitude between subjects of different ethnic backgrounds when Career Education instruction is conducted via video tape cassettes and reinforced with alternating computer assisted instructional (CAI) segments?

To accomplish the objective, the project developed fifteen color videotapes and fifteen CAI lessons designed specifically for use with Mexican-American students. Thus, a corollary problem to be investigated was:

> Are the videocassettes and CAI lessons in Career Education concepts uniquely well-suited to Mexican-American students, or do all students profit equally from this experience?

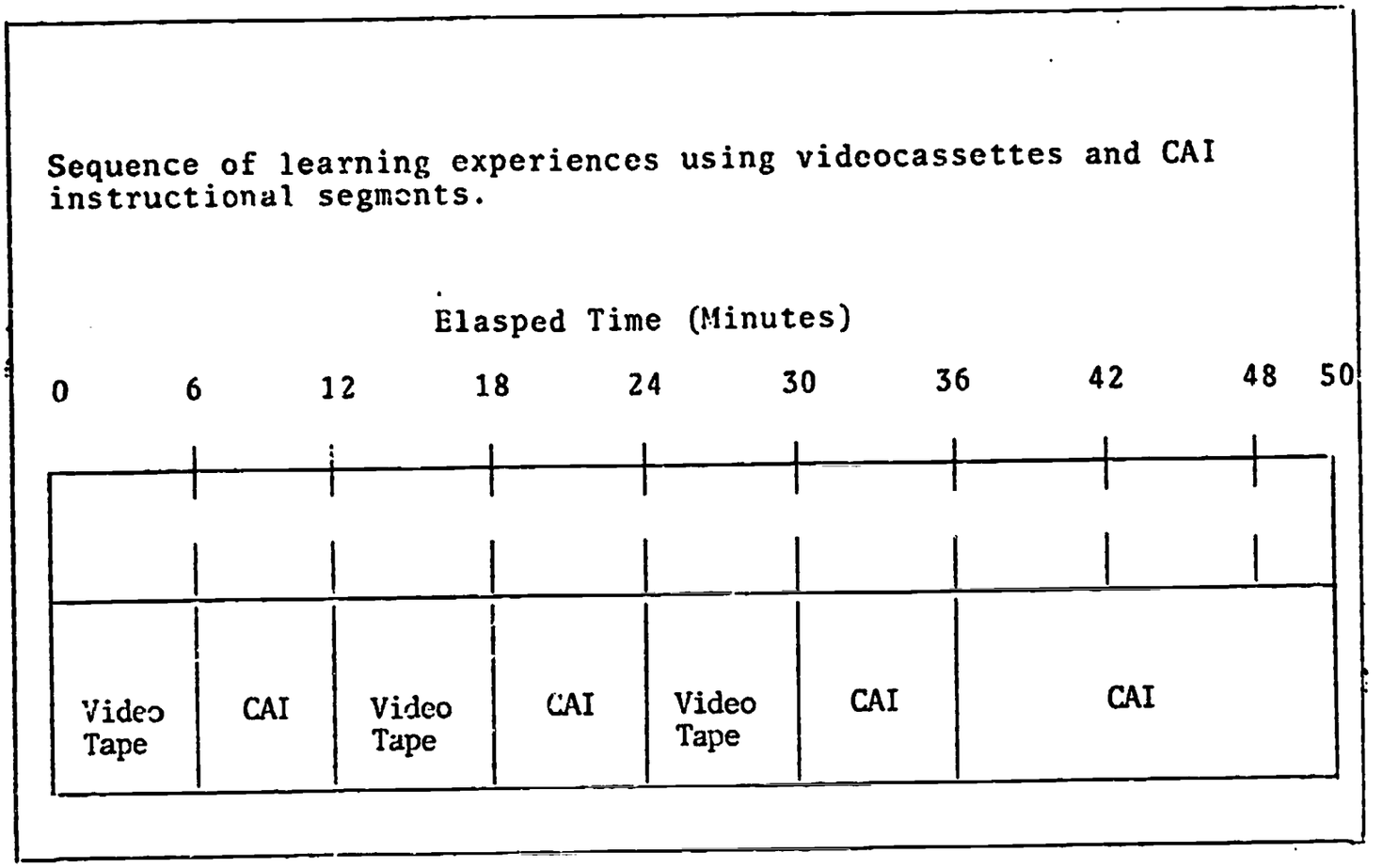
The videocassette and CAI materials were incorporated as instructional support for a one-semester course in Occupational Information for eighth grade students. The materials were presented to the students as indicated in Figure 5, and served to augment regular classroom instruction.

Conclusions. The project has been completed and the results have been fully reported in a Final Report. The conclusions drawn from the effort, however, are included here in summary form:

1. Student learning increased when classroom instruction was augmented by the use of the multimedia materials developed in this project.

2. Increases in student learning as measured by correct completion of the CAI materials, were evenly distributed among the Black, Mexican-American, and Anglo participants.

Figure 5:



3. Increases in student learning, as measured by the pre- and post-test, were greatest for Black females; all students in the treatment group, however, averaged a higher score on the post-test than did those students in the control group.

4. Student motivation, as measured by class attendance, was higher for those participants in the treatment group.

5. Students positively responded to questionnaire items dealing with their reactions to the experience. While Mexican-American students reported more difficulty in understanding the TV and CAI than did the Black students, this is partially explained by the general English language problems experienced by these students.

6. CAI was found to be a useable instructional tool for students with below-average reading levels. The individualized nature of CAI permitted the students to progress at their own pace, thus accommodating their slow reading comprehension rates.

7. Students evidences a great deal of enthusiasm and interest to the total experience, particularly to the immediate personal feedback provided in the CAI lesson.

* * * * * *

The curriculum development projects that have been described constitute only a portion of those which have been funded under provisions of Part I of the Vocational Education Amendments of 1968. The ones that have been described were chosen only in order to illustrate the variety of approaches that have been taken. In one approach, the focus has been on the development of content material, while in another the focus has been on concepts. In still another approach the emphasis has been on the development and utilization of technology-based information systems, and in yet another emphasis has been placed on the unique blending of technology and content for use with minority and culturally disadvantaged students.

As the products of these and other projects become available, teachers, coordinators, supervisors, and directors will find their resources for Career Education greatly enhanced. Both state and local education agencies will have available many more tools--all designed to insure that Career Education, in its most meaningful form, does reach the student, and does make a difference.

Utilization of Career Education Curriculum Materials

As indicated earlier in this series, there has been some reluctance to define Career Education in precise terms. Because of this, some state and local education agencies may perceive that career education curriculum materials developed with the help of national or federal agencies conflict to some extent with their

own existing educational philosophy. This, however, should not provide a serious problem if the materials that have been developed are adaptable--and are adapted to state and local needs.

In efforts to assist concerned efforts to cope with the problem alluded to above, many state and local educational agencies have developed criteria to determine the acceptability of curriculum materials.. Some of the criteria that have been established are in the form of "check-lists" that can be used to evaluate the worth of specific curriculum modifications. One such "check-list" has been prepared by and utilized in the Ohio Career Development Program, and is illustrated in Figure 6. As will be evident from the the illustration, the check list is designed to assist personnel from both state and local levels to examine curricular materials with some degree of objectivity and specificity. Additionally, the check-list might also be effectively utilized by citizen's study or advisory committees as they work with educational personnel.

In some states, the criteria for assessing components of Career Education--including curricular developments--are presented in the form of guidelines, position statements, or conceptual models. The Nevada State Department of Education, for example, has prepared and distributed a monograph, Career Development in Nevada, which contains both a Policy and Position Statement and a Conceptual Model. The monograph is intended as a resource tool that can be utilized by local school personnel as they develop amd implement programs of Career Education, and, by inference, to evaluate the degree to which programs and materials achieve the purposes that have been assigned.

Barriers to Use of Curricular Materials

Ordinarily, philosophies toward Career Education do not vary substantially from state to state or from district to district. The differences that do exist would appear to be more in terminology than in substance. However, even differences

Figure 6:

OHIO CAREER DEVELOPMENT PROGRAM

CURRICULUM SCREENING

1 2 3 4 5 6 7 8 9 10

1. Materials represent concepts of the Career Development Program.

Poor ——— Excellent

2. Objectives are measurable.

Poor ——— Excellent

3. Materials contain cognitive learning experiences.

Poor ——— Excellent

4. Materials contain affective learning experiences.

Poor ——— Excellent

5. Materials contain psychomotor learning experiences.

Poor ——— Excellent

6. Materials are relevant to the world of work.

Poor ——— Excellent

7. Materials represent a balance between subject areas and careers.

Poor ——— Excellent

8. Materials are feasible for use in the classroom.

Poor ——— Excellent

9. Resources required for implementing the materials are listed.

Poor ——— Excellent

10. Evaluation techniques are built in.

Poor ——— Excellent

11. Overall usability: Recommendations

in terminology--or more accurately perhaps, differences in understandings of terminology--may well be a reason for either non-acceptance or outright rejection of a given curricular approach in Career Education.

Additionally, it should be noted that in recent years there has developed, in many state and local education agencies, a sizeable cadre of educators who are quite knowledgeable in the skills of curriculum development. Such educators--wisely or unwisely--may perceive their own product to be superior to a "ready-made" one.

Both positions are, of course, understandable, but they are at the same time untenable.

If Career Education is to be a moving force in American education, every effort must be made to achieve the commonality of understanding that is needed. At the same time, every effort must also be made to utilize the best procedures and materials that are available, regardless of who produced them. And if it is apparent that the "best of two worlds" should be utilized, then so be it--as Hoyt and his colleagues have implied:

> It is apparent that at present, most development of career education instructional materials goes on in isolation from similar efforts in other school systems. It is also apparent that the most innovative materials, at present, are being developed at the local school system level and not in the college and university settings...What is really needed, however is the availability of reasonable effective materials which can be revised by classroom teachers.

However, the ability or expertise needed to adapt, revise, or construct curricular materials is not all that is needed if state and local education agencies are to utilize, either en toto of in part, the curricular materials that have been developed. Some general guidelines or criteria are also needed. Four such guidelines were developed by the American Institute of Research. According to the AIR,

curricular materials (for Career Education) should be:

1. Economically feasible. The cost of implementation must not be too high for typical school systems. It must fit within the confines of normal school expenditures for textbooks, workbooks, routine instructional materials, and classroom operation costs;

2. Predicated on regular classroom staffing patterns. Long-term in-service teacher training, extensive use of teacher aides or paraprofessionals, or the use of new categories of technical specialists is neither characteristic of most public education, nor likely to be characteristic in the immediately foreseeable future.

3. Contained within the current allocation of teacher time and effort. It cannot be expected to either extend the school day, or to supplant present parts of the curriculum. Finally it must be,

4. Amenable to local needs, interests, and options. It is unrealistic to assume that fixed "prepackaged" or "canned" curricula can anticipate all possible combinations of state, local and personal needs. Options for selective access and utilization based on local district and learner needs must be provided in the curriculum design and structure.

Thus, with the commitment of federal, state and local personnel to develop sound curriculum materials in career education, it appears all efforts will further insure that Career Education is a movement which reaches beyond administrative doors into the classroom for the improvement of education for each student.

Explanatory Notes

This paper, "Development and Utilization of Curriculum Materials for Career Education", is the third of a series of papers concerned with various aspects of Career Education by the Career Education Project of the Council of Chief State School Officers. It is hoped that the series will contribute to the knowledge base of state education agencies. At the same time, it is also hoped that the series will, in a variety of ways, assist State Directors or Coordinators of Career Education in their efforts to further translate the concept of Career Education into a workable and viable educational process in their individual states.

The series has been authored principally by David L. Jesser, Director of the CCSSO Career Education Project. However, much assistance in the preparation of the series was provided by Nancy Pinson and Niel Carey, both with the Maryland State Department of Education; by Linda Keilholtz, of the Ohio State Department of Education, and by Byron Vanier, of the Nebraska State Department of Education. Special recognition and thanks is tendered to these interested, concerned, and dedicated educators.

It should be noted that a choice was made not to use footnote references in this series. Instead, the references or sources to which footnote references would generally be made are included in the Selected References section which follows.

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